CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.06/RV/CSR-07/106c/CEMENT/2016-17 Date: 01.08.2016

TEST REPORT ON CEMENT

* CUSTOMER	:	**Asst. Executive Engineer**, Byatarayanapura Sub Division, BBMP, Bangalore.
*AGENCY	:	**Mr. R. Vasanth,** #28, Thimmaiah Layout, Nagashettyhalli, RMV II Stage, Bangalore.
*NAME OF THE WORK	:	Improvements to Roads and Drains at BDS & Ratansai layout in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.
*REFERENCE	:	BBMP/EE/BTP/WO/71/2016-17 Dated: 20.07.2016
SAMPLE ID	:	Cement
SAMPLE RECEIVED ON	:	30.07.2016
PERIOD OF TESTING	:	30.07.2016 to 01.08.2016

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988(RA-2009)	30.00 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988(RA-2009)	155 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988(RA-2009)	485 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988(RA-2009)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

Note:

⇒ The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

AE

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.06/RV/CSR-07/106c/SAND-Gradation/2016-17 : 01.08.2016

TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. R. Vasanth,**
#28, Thimmaiah Layout, Nagashettyhalli, RMV II Stage, Bangalore.

*** Name of Work** : Improvements to Roads and Drains at BDS & Ratansai layout in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.

Reference : BBMP/EE/BTP/WO/71/2016-17 Dated: 20.07.2016

Technical Reference : IS : 2386 Part 1 - 1963 RA-2007

Sample ID : Fine Aggregates

Sample Received on : 30.07.2016

Date of Testing : 01.08.2016

Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	94.10	90-100	90-100	90-100	95-100
2.36	74.80	60-95	75-100	85-100	95-100
1.18	51.00	30-70	55-90	75-100	90-100
600 Micron	22.70	15-34	35-59	60-79	80-100
300 Micron	11.10	5-20	8-30	12-40	15-50
150 Micron	5.10	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

AE-06 n/a

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

AE

VISHWANATH .C
Quality Manager

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.06/RV/CSR-07/106c/AGG/GR/2016-17 : 01.08.2016

TEST REPORT ON DETERMINATION GRADATION OF COARSE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. R. Vasanth,**
#28, Thimmaiah Layout, Nagashettyhalli, RMV II Stage, Bangalore.

*** Name of Work** : Improvements to Roads and Drains at BDS & Ratansai layout in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.

Reference : BBMP/EE/BTP/WO/71/2016-17 Dated: 20.07.2016

Technical Reference : IS : 2386 Part 1 -1963 RA-2007

Sample ID : Coarse Aggregates (40mm)

Sample Received on : 30.07.2016

Date of Testing : 01.08.2016

Total Wt. of Aggregates in gms= **7000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	97.86	95-100	85-100
20	37.96	30-70	0-20
10	16.19	10-35	0-5
4.75	2.83	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits.

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

AE

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.06/RV /STEEL/2016-17 01.08.2016

TEST REPORT ON REINFORCEMENT STEEL

Customer : **Asst. Executive Engineer**, Byatarayanapura Sub Division, BBMP, Bangalore.

Agency : **Mr. R. Vasanth,** #28, Thimmaiah Layout, Nagashettyhalli, RMV II Stage, Bangalore.

Name of the Work : Improvements to Roads and Drains at BDS & Ratansai layout in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.

Reference : BBMP/EE/BTP/WO/71/2016-17 Dated: 20.07.2016

Date of Test : 01.08.2016

Technical Reference : IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm^2	Tensile strength (Ultimate stress) N/mm^2	Elongation percent gauge length		
1	10	0.62	513	556	13.30	O.K	O.K

AE-06 n/a

Note:

⇒ The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

****

AE

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.06/RV/CSR-07/106c/CUBE/2016-17 05.09.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	: **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
* Agency	: **Mr. R. Vasanth,** #28, Thimmaiah Layout, Nagashettyhalli, RMV II Stage, Bangalore.
* Name of the work	: Improvements to Roads and Drains at BDS & Ratansai layout in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.
* Reference	: BBMP/EE/BTP/WO/71/2016-17 Dated: 20.07.2016
* Sample ID	: Drain Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
* Grade of Concrete	: M_{15}
Compressive Strength as on	: 28th day
Sample Received on	: 05.09.2016

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	08.08.2016	05.09.2016	8.128	362.3	16.10
2	08.08.2016	05.09.2016	8.259	378.3	16.81
3	08.08.2016	05.09.2016	8.368	382.9	17.02

* Information is furnished by the Customer/Representative

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

AE

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.06/RV/CSR-07/106c/CUBE/2016-17

07.09.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	: **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
* Agency	: **Mr. R. Vasanth,** #28, Thimmaiah Layout, Nagashettyhalli, RMV II Stage, Bangalore.
* Name of the work	: Improvements to Roads and Drains at BDS & Ratansai layout in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.
* Reference	: BBMP/EE/BTP/WO/71/2016-17 Dated: 20.07.2016
* Sample ID	: Cement Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
* Grade of Concrete	: M_{20}
Compressive Strength as on	: 28th day
Sample Received on	: 07.09.2016

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	10.08.2016	07.09.2016	8.180	478.3	21.26
2	10.08.2016	07.09.2016	8.225	496.3	22.06
3	10.08.2016	07.09.2016	8.315	516.5	22.96

* Information is furnished by the Customer/Representative

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

AE-06

AE

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.06/RV/WMM/Gradation/2016-17 : 01.08.2016

GRADATION FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

Agency : **Mr. R. Vasanth,**
#28, Thimmaiah Layout, Nagashettyhalli, RMV II Stage, Bangalore.

Name of Work : Improvements to Roads and Drains at BDS & Ratansai layout in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.

Reference : BBMP/EE/BTP/WO/71/2016-17 Dated: 20.07.2016

Date of Testing : 01.08.2016

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **8010**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	150	150	1.9	98.1	95-100
22.4	2495	2645	33.0	67.0	60-80
11.2	1520	4165	52.0	48.0	40-60
4.75	1030	5195	64.9	35.1	25-40
2.36	895	6090	76.0	24.0	15-30
0.600	800	6890	86.0	14.0	8-22
0.075	795	7685	95.9	4.1	0-8

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

AE

****

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.06/RV/SDBC/Bitumen/2016-17 22.08.2016

BITUMEN CONTENT AND GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

As per IS2386 and IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
AGENCY	**Mr. R. Vasanth,** #28, Thimmaiah Layout, Nagashettyhalli, RMV II Stage, Bangalore.
NAME OF THE WORK	Improvements to Roads and Drains at BDS & Ratansai layout in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/EE/BTP/WO/71/2016-17 Dated: 20.07.2016
SAMPLE I/D	Roads in Ratansai layout in Ward No.06
DATE OF TESTING	22.08.2016

CIVIL TECH CONSULTANTS & ENGINEERS — CIVIL ENGINEERING TESTING LABORATORY — www.civiltechconsultants.com

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	475	474
3. Weight of Asphalt and Mineral matter Extracted,	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25	26.00
7. Bitumen content in %	5.00	5.20
8. Average	**5.10**	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Trail 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
13.2	0	0	0	100	100
9.5	33.12	6.97	6.97	93.03	90-100
4.75	259.6	54.65	61.63	38.37	35-51
2.36	38.25	8.05	69.68	30.32	24-39
1.18	42.35	8.92	78.59	21.41	15-30
0.3	41.39	8.71	87.31	12.69	9-19
0.075	30.22	6.36	93.67	6.33	3-8

SIEVE SIZE	Trail 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
13.2	0	0	0	100	100
9.5	32.28	6.46	6.46	93.54	90-100
4.75	265.5	53.10	59.56	40.44	35-51
2.36	55.26	11.05	70.61	29.39	24-39
1.18	45.26	9.05	79.66	20.34	15-30
0.3	35.25	7.05	86.71	13.29	9-19
0.075	41.22	8.24	94.95	5.05	3-8

Civil-Tech Consultants & Engineers Bangalore

Note:

- This test report should not be reproduced except in full, without written approval of the laboratory
- The results indicated above are based on the tests carried out on the samples received in the laboratory
- Any Query regarding the report must be reported within 30 days from the date of testing.

****

M/s. Civil-Tech Consultants & Engineers

23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-560079.

AE

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.

Tele Fax : 23223227, Website : www.civiltechconsultants.com

E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No: CTCE/BBMP/W.No.06/RV/BC/Bitumen/2016-17 25.08.2016

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE

As per IS2386 and IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
AGENCY	**Mr. R. Vasanth,** #28, Thimmaiah Layout, Nagashettyhalli, RMV II Stage, Bangalore.
NAME OF THE WORK	Improvements to Roads and Drains at BDS & Ratansai layout in Ward No.06, Byatarayanapura Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/EE/BTP/WO/71/2016-17 Dated: 20.07.2016
SAMPLE I/D	Roads in Ratansai layout in Ward No.06
DATE OF TESTING	25.08.2016

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	470	469
3. Weight of Asphalt and Mineral matter Extracted, g	30	31
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	30	31
7. Bitumen content in %	6.00	6.20
8. Average	6.10	

GRADATION AFTER EXTRACTION

TABLE - 1

SIEVE SIZE	Percent Passing, %		JOBMIX
mm	Sample 1	Sample 2	Gradation
19	100.00	100.00	100
13.2	85.35	83.36	79-100
9.5	75.25	76.35	70-88
4.75	59.36	63.15	53-71
2.36	44.36	45.35	42-58
1.18	41.28	42.36	34-48
0.6	29.22	29.69	26-38
0.3	26.33	25.10	18-28
0.15	15.28	14.36	12-20
0.075	5.23	6.35	4-10

Note:

⇒ This test report should not be reproduced except in full, without written approval of the laboratory

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory

⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560 079.

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.

Tele Fax : 23223227, Website : www.civiltechconsultants.com

E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com